



STATE OF MAINE
DEPARTMENT OF CONSERVATION
MAINE FOREST SERVICE
168 STATE HOUSE STATION
AUGUSTA, MAINE
04333-0168

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IDM Home Page: <http://www.maine.gov/doc/mfs/idmhome.htm>

Forest & Shade Tree - Insect & Disease Conditions for Maine
May 14, 2010

As many of our readers may have recently heard, an established forest population of hemlock woolly adelgid (HWA) has been detected on the easternmost peninsula of Harpswell, Maine. This is more than 30 miles as the crow (seagull or wind) travels from the nearest known forest infestation, at Ferry Beach State Park in Saco. We have not had time to delimit the population, but it is clear that the first detected spot is a result of natural spread and has been established for some time. The area is native forest, and we had no difficulty finding infested trees from the shoreline to areas in the forest more than 300 feet from the shore. Arborists doing right-of-way maintenance detected a second occurrence of the insect, which may or may not be distinct from the first. We expect this is just a small portion of a more widespread infestation.

The HWA populations in Harpswell are as heavy as any we have seen in areas of York County known to be infested since at least the early part of this decade. Your assistance in surveying for this insect when you are working or playing around hemlock is greatly appreciated. Please pay special attention to hemlocks in Plant Hardiness Zone 5 as depicted on the map. To date detectable HWA populations in the northeast are generally confined to Plant Hardiness Zone 5b and warmer regions. The mild winter should have allowed populations throughout our region to expand dramatically, and we expect HWA to be detectable in areas where it has not been in the past.

To search for HWA, look on the undersides of newer growth of hemlock for distinct, white woolly masses resembling cotton balls. The adelgids are attached to the twigs, at the bases of needles. Forest edges, waterways and trails seem to be areas where HWA is first detectable. New infestation centers are also often located near birdfeeders; you can reduce the risk of bringing HWA into your backyard by removing your birdfeeders from April to August.

We cannot emphasize enough the value of your help in finding and reporting new detections of this and other pests. If you suspect you have found HWA please contact us at (207) 287-2431 or allison.m.kanoti@maine.gov.

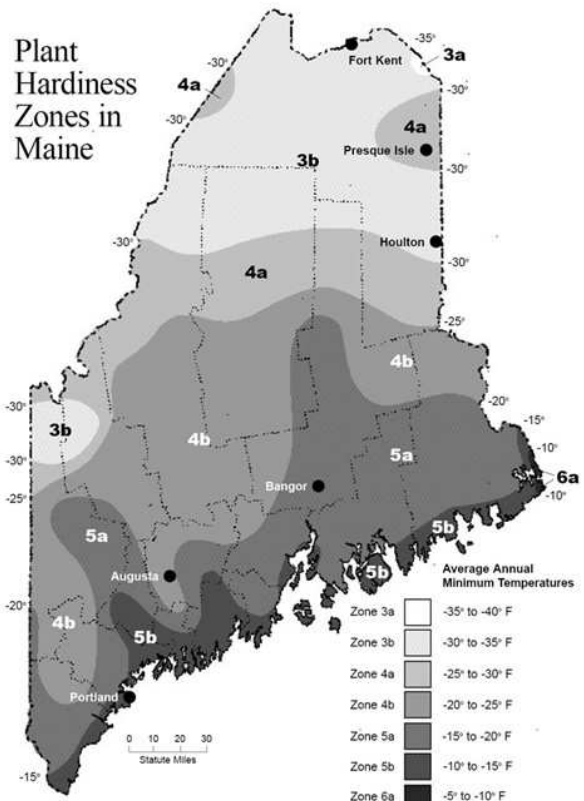
Map used by permission Meteorological Evaluation Services Co., Inc and University of Maine Cooperative Extension. For more details about this product, visit: www.umext.maine.edu/onlinepubs/htmlpubs/2242.htm.

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www.maineforestservice.gov/idmhome.htm

We help you make informed decisions about Maine's forests



Guide to Pest Management for May

Remember that this is just a guide and that conditions will vary. Information on any entry preceded by an (*) may be available on our website or can be requested by calling or writing to the Insect and Disease Laboratory, 168 State House Station, Augusta, Maine 04333-0168; Phone (207) 287-2431; Fax (207) 287-2432.

Insect/Disease	Cultural Controls	Chemical Controls
*Balsam Gall Midge		The tiny mosquito-like adults have already begun to emerge. Populations are up so Christmas tree growers should monitor their plantations and apply Diazinon or chlorpyrifos (Lorsban) if necessary as the new needles emerge and flatten.
Balsam Shootboring Sawfly		Too late now for chemical control.
*Balsam Twig Aphid		Last chance now for control in southern Maine. Control may be achieved using Diazinon or chlorpyrifos (Lorsban) in northern and eastern Maine as buds begin to break.
Balsam Woolly Adelgid	Rogue out and destroy infested stock from Christmas tree plantations and be sure that planting stock is from a clean source. In forested situations harvest ahead of mortality.	Esfenvalerate (Asana) or Imidicloprid. Low population levels will render treatments unnecessary for most growers this year.
*Birch Leaf Miner		Watch for black fly-like adults around the foliage from now through mid-June. Apply foliar treatment with carbaryl (Sevin) or acephate (Orthene) when small developing mines (seen as small translucent spots in the leaves) are evident.
*Browntail Moth	Avoid mowing or raking in infested areas to avoid stirring up the hazardous caterpillar hairs. Clip overwintering webs next winter.	Too late to control as caterpillars have dispersed across the landscape. Call for more information. Check with the Board of Pesticide Control for the regulations for spraying near water .
*Gypsy Moth	Begin watching for larval activity this season. Tiny larvae frequently drift around on spring breezes. If found, be prepared to remove and destroy egg masses next fall.	Monitor populations now to determine whether or not control will be necessary. Treatment options include Bt, acephate (Orthene) and carbaryl (Sevin).

Insect/Disease	Cultural Controls	Chemical Controls
*Hemlock Looper		Look now for tiny looper larvae with black heads, survey methods are available. Treat in late June if necessary with Bt.
*Hemlock Woolly Adelgid	Please contact us.	Please contact us.
*Mountain Ash Sawfly	Remove and destroy infested leaves early as egg pouches or tiny larvae appear in late May.	Treat older larvae with acephate (Orthene) or carbaryl (Sevin).
*Pine Shoot Beetle	Please contact us	Please contact us.
Rhizosphaera Needlecast of Spruce		Chlorothalonil (Bravo, Daconil) copper hydroxide (Kocide), or mancozeb (Protect T/O) when needles are about 0.5 in. long and again 10 days to two weeks later
Sphaeropsis (Diplodia) Tip Blight of 2 and 3 needle Pines		Copper hydroxide (Kocide, Bordeaux Mix) or chlorothalonil (Bravo, Daconil) shortly after budbreak and again 10 days to two weeks later.
*Viburnum Leaf Beetle	Prune off twigs with egg pockets on them before hatch (early- to mid-May).	Treat infested shrubs now (before the end of May) with acephate (Orthene), carbaryl (Sevin) or chlorpyrifos.
*Yellowheaded Spruce Sawfly	Small infestations may be controlled by hand picking larvae and dropping them into soapy water.	Watch for adults around foliage now through early June. Look for developing larvae in June and be prepared to treat with carbaryl (Sevin), chlorpyrifos (Lorsban) or spinosad (Success) if populations warrant.
Yellow Witches Broom of Balsam Fir	Prune brooms from Christmas trees, taking care to make pruning cuts below galls at the bases of brooms. Weed control may help with management, since alternate hosts are species in the family Caryophyllaceae, including chickweed (<i>Stellaria media</i>) and mouse-ear chickweed (<i>Cerastium vulgatum</i>).	None effective at this time.

***NOTES:** These recommendations are not a substitute for pesticide labeling. Read the label before applying any pesticide. Pesticide recommendations are contingent on continued EPA and Maine Board of Pesticides Control registration and are subject to change. Other effective registered fungicides are available and marketed under other product names. No endorsement or exclusion of similar products not mentioned by the Maine Forest Service is intended or implied. Ask your supplier for specifics, and always read the label of any product before applying on site.

Restricted-use pesticide may be purchased and used only by certified applicators. **Caution:** For your own protection and that of the environment, apply the pesticide only in strict accordance with label directions and precautions.

INSECTS

The unusually warm weather this spring means that many insects are active earlier than usual. If you are a Christmas tree grower in particular you need to look at the insect signs and the trees - not the calendar. Usually tree development and insect feeding are synchronized in a predictable fashion but some years the trees or insects are a bit 'off' the norm; when that happens you can get either far less damage than usual or far more. This year the insects are ahead of tree development so the leaves or needles are smaller and still expanding when the insects begin feeding. That means each little 'buggy bite' has a greater impact on the foliage. Think of putting a dot on a balloon with a marker. When you blow the balloon up the dot gets larger. The same happens when an insect takes a bite of a leaf and then the leaf continues to expand – the bite hole gets bigger. This translates into more damage to the foliage for the same amount of insect feeding compared to a normal year. There are not too many early season defoliators out there creating problem but where they occur their damage is going to be worse this year.

***Balsam Gall Midge** (*Paradiplosis tumifex*) – This is a repeat of the article in the first conditions report but it bears repeating. Balsam gall midge populations were high in places in 2009, particularly downeast. Christmas tree growers should be checking their plantations this spring for the midges. The balsam gall midge larvae feed on the new foliage and cause the needle to deform and form a gall around the growing larvae. After the larvae finishes feeding and drops to the ground at the end of summer, the damaged needles also fall off. Populations can get high enough so that the tips of branches are denuded. This makes Christmas trees and wreath brush unmarketable for a few years until the foliage fills in.

The small orange midges are already active and have been for at least a week. Look for them in the early evening when the breezes die down. Treatment is applied approximately two weeks after adults have been seen in large number (late May to early June) as the new needles flare and begin to flatten. Watch tree development, it may be early this year.

***Balsam Twig Aphid** (*Mindarus abietinus*) – Christmas tree growers who had a problem last year should check to see if there are aphids on their trees now. Take a dark piece of paper or cloth, hold it under the outer branches and beat the branches to dislodge the aphids. Look for the tiny, yellow nymphs. Do this twice in 15 trees. If there are more than 2 aphids/tree and you had a problem last year, consider treatment.

***Balsam Woolly Adelgid** (*Adelges piceae*) - The balsam woolly adelgid population is still low in most of Maine at this time. The warm winter of 2009/10 in the Northeast (I know it was cold further south) may allow the population to rebound. Balsam woolly adelgid can be found feeding at the base of foliage shoots and cone buds. They are tiny and black and look like little hand grenades with wisps of wool coming off them. I need a hand lens to see them but if you have good eyes you can spot them without one. As the season progresses they will produce more waxy wool to cover both themselves and their eggs. The adelgid feeding causes the branch nodes to swell forming 'gouts' that deform the tree and bud formation is reduced or does not occur at all. Balsam woolly adelgid can also be found on the trunks of fir. Trunk phase adelgids kill trees more rapidly than the gout phase. Christmas tree growers should rogue out any fir showing swelling at branch nodes.

Birch Casebearer (*Coleophora serratella*) – This early spring feeder was active early this year. The leaves had barely unfurled when the casebearer started grazing on the undersides of the leaves causing them to curl around the skeletonized spots. The casebearers have already dropped off the foliage in central Maine. No treatment at this time but you may see the distorted, skeletonized foliage.

***Birch Leafminer** (*Fenusa pusilla*) - Tiny developing mines, resembling translucent spots along the margins of the new leaves, have begun to appear in the southern half of the State and will likely show up by the end of the month in the north. Mines of another **white birch leafminer** (*Messa nana*) usually appear in June.

***Browntail Moth** (*Euproctis chrysorrhoea*) - A mild winter and early spring has brought about a large-scale infestation of the browntail moth caterpillar that is heavily defoliating oak trees in Topsham, Bath, West Bath, Brunswick and Bowdoinham as well as Kennebunkport and Turner. The microscopic hairs can cause a nasty skin rash, much like poison ivy or respiratory problems in sensitive individuals.

The winter survey indicated there were extremely high numbers of over-wintering webs and a high survival rate of moth larvae in those webs because of the mild winter. Last year's weather appears to have been "perfect" conditions for browntail moth. A dry May and cool June last summer led to a moth population explosion, although browntail moth has been a problem for the area for a number of years.

Then the very warm and early spring caused the caterpillar to emerge early while there still isn't much foliage on trees for it to eat so they're outstripping their food source. The caterpillars then make a fine silk strand to travel on the wind and land on other bushes and trees or the ground looking for more food. That means they're crawling up people's houses, on their decks, across the lawn and on every shrub and bush in the area. Instead of being concentrated on trees they are everywhere.

At this point, spraying probably is really not an option because the caterpillars have moved from their primary host trees and are on everything. In addition there are specific regulations for the control of the insect near marine waters to protect lobster from chemicals.

The caterpillar, distinctive because of the two patches of bright orange on its end, is covered with toxic microscopic hairs that are a very good defense system. Unfortunately, those hairs can cause a blistering, oozy rash or respiratory distress for human beings who come into contact with them. The hairs break off the caterpillars and circulate in the air. The caterpillar also molts, and the dried skin containing the hairs can drift, also causing problems for people. The hairs remain toxic for a year or more, so people still can be affected in coming years.

The moth has one generation a year, with the caterpillar active in May and June. The white moths fly in July and will be looking for oaks and apple trees that were not defoliated earlier. Whether the high infestation continues into next year depends on weather conditions and survival rates. This might be a good thing, though it's bad right now because more people are coming into contact with the caterpillars. A lot of caterpillars may actually starve to death. What we can hope is that the population crashes because they don't have enough to eat.

In the meanwhile, there are a number of things that residents in affected areas can do to protect themselves:

- All yard work should be done when conditions are wet or damp;
- Mow when the grass is wet;
- Use water to wash caterpillars off structures;
- Don't sit on lawns;
- Keep windows shut, especially on dry, windy days;
- Wear appropriate clothing, such as long-sleeved shirts and pants;
- Be aware of conditions when raking brush or leaves this fall or doing work next spring.
- Contact your health care provider if you experience symptoms.

Additional precautions are listed at our website: <http://www.maine.gov/doc/mfs/btm precautions08.htm>

For more information about the browntail moth, go to: <http://www.maine.gov/doc/mfs/btm08.htm>

For more information about pesticides, go to: <http://www.maine.gov/agriculture/pesticides/>

***Gypsy Moth** (*Lymantria dispar*) – Gypsy moth hatched in Greenville this week, they needed their long johns on! After hatching these tiny larvae spin out on silken threads and are picked up by breezes. The lucky ones land on suitable host material. Short distance dispersal occurs by way of this “ballooning”. Long distance dispersal often is the result of human activities—people unwittingly move egg masses or other life stages on articles such as RV campers, firewood and other items that are stored outside. Few egg masses were found anywhere in Maine when surveys were conducted last fall.

Larch Casebearer (*Coleophora laricella*) - Populations of larch casebearer are low in most areas this spring but there are patches of mild to heavy browning of the early foliage. Definitely spotty populations this year.

Pear Thrips (*Taeniothrips inconsequens*) - Pear thrips populations are low again with little damage observed so far this year.

Aspen Leafroller Complex – Quaking aspen has had leaf roller damage on it for a number of years particularly in the central part of the state. The larvae are active now and there appears to be one primary species whose identity still needs to be positively determined. Besides leafrollers there are also loopers chewing on the foliage and leafhoppers sucking the juices from the leaves distorting their form.

***Yellowheaded Spruce Sawfly** (*Pikonema alaskensis*) - Adults will soon be active around young spruce trees. They are particularly attracted to open grown white spruce under 12 feet tall. The eggs hatch in June and most people do not notice the yellow (orange)-headed, striped, green larvae until substantial amounts of foliage have already been eaten off the tree. If you have spruce that have bare lateral branches especially near the top of the tree, check for larval feeding in June.

DISEASES AND INJURIES

Timing of Leaf and Needle Disease Fungicide Applications – This early spring season has moved budbreak and leaf expansion dates earlier as well. Estimates are that the season is resulting in plant development as much as two weeks earlier than “usual,” depending on location. As a result, the leaves of most hardwood species are at the developmental stage that would require the *second* application of fungicides for management of anthracnose diseases now or by the end of the third week in May. One exception to this would be application for ash anthracnose. Ashes always flush later than most other tree species.

Similarly, the first fungicide application for spruce needle cast (*Rhizosphaera kalkhoffii*) should have been applied by now. In most coastal, mid-, and southern Maine areas the second application should be applied by late May.

Recommendations for management of specific diseases and effective fungicides are available in the April issue of the *Conditions Reports*, which is also available on-line.

Hemlock Tip Blight (*Sirococcus tsugae*) - Localized damage and even some possible tree mortality resulting from infection of hemlock by hemlock tip blight has been observed in natural stands in York and Saco (York Co.). The tip blight has been found on hemlocks throughout nine of the southern-most counties in Maine, and was most recently reported from the town of Penobscot (Hancock Co.). The disease is most easily recognized on advance regeneration growing in dense understory conditions. For more information on hemlock tip blight a

Pest Alert (NA-PR-01-10) is now available from the USDA Forest Service and the Maine Forest Service, and is also available on-line.

Late-Spring Frosts - Reports of late-spring frost damage to some sensitive ornamental plants, and to new growth on some tree species have been received this week. The long period of warm spring weather likely contributed to the injury by allowing tender young growth to be exposed earlier than usual. Plant species as diverse as apples (*Malus* spp.), Andromeda (*Pieris* spp.), bamboo or Japanese knotweed (*Fallopia* spp.), American beech (*Fagus grandifolia*) ashes (*Fraxinus* spp.), oaks (*Quercus* spp.) and maples (*Acer* spp.) have been damaged in widely scattered locations throughout the state. Damage to beech and maple has been observed in Andover North Surplus and Pownal. Damage to oaks has been observed in Kennebec Co., and also in the Skowhegan and Norridgewock areas. Damage to *Pieris* was observed in Augusta, and damage to bamboo was seen in several locations in southern Maine and as far north as Sidney. However, plants in almost any community may have experienced some damage.

Injury to newly-flushed shoots on conifers also may have occurred. A hard frost in central and northern Maine occurred late last week, and some damage to evergreen ornamentals and Christmas tree plantations is likely to have occurred. Conifer injury is often slower to become visible, showing up as dead branch tips two weeks or more after the injury has occurred. Monitoring conifers closely for the next few weeks will help to corroborate the cause as frost.

Symptoms of frost damage include wilting and a water-soaked or translucent appearance of leaves and shoots after thawing. A blackening of the affected tissues within a day or so after the freezing event is also common. Frost damage is expected to be of little long-term consequence to forest trees. Trees can re-foliate and shoots often recover after being killed back. Tree seed production (acorns on oaks, for example) may be reduced in localized areas or on individual trees. The frost conditions may have caused a serious reduction in production of apples and some other fruits as well.

White Pine Needle Cast (*Canavirgella banfieldii*) – The browning and loss of needles resulting from infection by *C. banfieldii* that was very prevalent last year, particularly in western regions of the state, appears to have largely abated. A brief survey of mature white pines in Kennebec, Androscoggin, and Oxford counties this past week has shown very little evidence of the needle cast. While a few individual trees were found with the disease, the overall level of infection observed so far this year is very low. White pines which develop the disease will hold brown needles until late June or early July, giving the crowns a brownish cast that may appear similar to injury caused by roadway de-icing salts. Since white pines usually naturally retain needles for only two or, at most, three years this respite from the disease should restore most crowns to their full needle complement this year.